

REMARKS

Claims 1 – 34, 36 – 38, and 40 – 45 are in the instant application. Claims 1 – 34 and 42 – 45 are allowed.

Claim 41 is amended by deleting “l” from line 3. The “l” was the last letter of the word “oxy-material” that was deleted in the previously filed amendment. Applicant respectfully submits that the amendment to claim 41 does not add new subject matter and does not require additional searching. Based on the foregoing, applicant respectfully requests admission and consideration of amended claim 41.

Claims 38 and 40 are rejected under 35 U.S.C. 112, second paragraph. Applicant respectfully traverses the rejection of claims 38 and 40 under 35 U.S.C. 112, second paragraph

Claims 38 and 40 are each dependant on claim 36. The Office Action alleges that claim 36 has been amended to reflect a protective layer that may be a heat convertible metal layer, wherein this layer is deposited over the dielectric layer space the greatest distance from the substrate. Applicant respectfully submits that the Office Action reading of claim 36 is not a complete reading. More particularly, claim 36 recites, among other things, that the (A) film is deposited over the dielectric layer spaced the greatest distance from the substrate and that the (C) film which is a heat convertible metal film may be located, among other places, on the substrate before the first dielectric layer (claim 38) or between the first dielectric layer and the second dielectric layer below the first reflective layer (claim 40).

A more detailed analysis to claims 36, 38 and 40 clearly shows that claims 38 and 40 meet the requirements of 35 U.S.C. 112, second paragraph. Claim 38 recites, among other things, that “the protective layer is a heat convertible metal located on the substrate before the first dielectric layer.” Claim 36 recites, among other things, that at least one protective layer is “selected from (A) a heat convertible metal film wherein the metal is selected from zirconium, niobium, tantalum, chromium, nickel and alloys thereof and alloys with silicon at a thickness for the layer of 15 to 25 Å, (B) at

least two films selected from: metal, metal-oxy materials, silicon and silicon oxy-materials where the oxy-materials are selected from oxides and oxynitrides, and where the metal of the at least two films is the same or different and selected from a transition metal of Groups 4, 5, 6 or 10 of the Periodic Table of Elements, or (C) a heat convertible metal film wherein the metal is selected from niobium, tantalum and alloys thereof and alloys with silicon at a thickness for the layer of 5 to 60 Å wherein the protective layer is located in the stack of layers to provide durability to the stack of layers and wherein the protective layer is not deposited on the optionally a first metal primer layer and the (A) film is deposited over the dielectric layer spaced the greatest distance from the substrate."

Claim 36 recites, among other things, that the protective layer is selected from (A), (B) or (C) films. Films (A) and (C) are heat convertible films. The film (A) is deposited over the dielectric layer spaced the greatest distance from the substrate and is not the film recited in claim 38. Based on the foregoing, the protective layer recited in claim 38 is film (C) because it is the only film that meets the limitations recited in claims 36 and 38. Claim 36 further recites, among other things, that "the protective layer is located in the stack of layers to provide durability to the stack of layers." The film (C) recited in claim 38 is on the substrate before the first dielectric layer, i.e. the protective layer is the outermost film of the coating stack facing the substrate.

Claim 40 recites, among other things, that "the protective layer is a heat convertible metal located between the first dielectric layer and the second dielectric layer below the first reflective layer." Claim 36 recites, among other things, that the protective layer is selected from (A), (B) or (C) films. Films (A) and (C) are heat convertible films. The film (A) is deposited over the dielectric layer spaced the greatest distance from the substrate. Based on the foregoing, the protective layer recited in claim 40 is film (C) because it is the only film that meets the limitations of claims 36 and 40. Claim 36 further recites, among other things, that "the protective layer is located in the stack of layers to provide durability to the stack of layers." The

film (C) recited in claim 40 is between the first dielectric layer and the second dielectric layer below the first reflective layer.

Applicant acknowledges that claims 38 and 40 can each be amended to be in independent form which would more positively recite applicant's patentable novel coated article; however, because this is a response to a Final Office Action, applicant has concerns that amending the claims to present them in independent form would be considered to require a new search, and the amendment would not be entered. Applicant is agreeable to amending claims 38 and 40 to present them in independent form to more positively recite the invention presently recited in claims 38 and 40.

Based on the foregoing, applicant respectfully requests withdrawal of the rejection of claims 38 and 40 under 35 U.S.C. 112, second paragraph.

Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Finley U.S. Patent No. 5,059,295 (hereinafter also referred to as "Finley"). The Office Action alleges that Finley teaches a multiple-layer coated article with layers in the following order and beginning with a glass substrate : a dielectric layer of mixed tin and zinc oxides, layer of metal (considered by the Office Action as a first primer layer, a layer of silver, another layer of metal, and a layer of mixed tin and zinc oxides, and finally a layer of titanium oxide. The Office Action concludes by alleging that this embodiment has a substrate, at least one dielectric layer (the first mixed oxide layer) and the protective coating may be considered the final layering of the two oxide films.

Applicant respectfully traverses the rejection of claim 36 under 35 U.S.C. 102(b) as being anticipated by Finley and requests reconsideration thereof.

In the arrangement proposed by the Office Action, the alleged protective layers of Finley are the last zinc stannate film and the outer most titanium oxide film referred to by Finley as "an exterior protective layer of titanium metal or titanium oxide (see column 3, lines 40 – 43, of Finley). Applicant respectfully submits that the last deposited zinc stannate layer of

Finley is not a protective layer. More particularly, in column 6, lines 52 – 66, Finley discloses that a coating having an outermost layer of zinc stannate and no primer layers had the outermost layer of zinc stannate and the underlying silver layer removed after several passes with a damp cloth. In comparison, a coating having a primer layer under and over the silver layer, and a zinc stannate layer over the primer layer showed no visible change after prolonged vigorous rubbing. Based on the foregoing disclosure in Finley, applicant respectfully submits that the zinc stannate layer is not a protective film, and therefore, when used in combination with an outer titanium oxide film does meet the recitation of claim 36. More particularly does not met, among other things, a protective film of "... (B) at least two films selected from: metal, metal-oxy materials, silicon and silicon oxy-materials where the oxy-materials are selected from oxides and oxynitrides, and where the metal of the at least two films is the same or different and selected from a transition metal of Groups 4, 5, 6 or 10 of the Periodic Table of Elements,..."

In further support of applicant's position that Finley does not anticipate the subject matter of applicant's claim 36, the dielectric layer of Finley under the outer protective layer of titanium oxide is not a metal oxide film; it is a zinc/tin alloy oxide film (see column 5, lines 57 – 61, of Finley). Applicant's claim 36 recites, among other things, that the protective layer is selected from "(B) at least two films selected from: metal, metal-oxy materials, silicon and silicon oxy-materials where the oxy-materials are selected from oxides and oxynitrides, and where the metal of the at least two films is the same or different and selected from a transition metal of Groups 4, 5, 6 or 10 of the Periodic Table of Elements." Further claim 36 maintains a distinction between "metal" and "alloy." Note that films (A) and (B) recited in claim 36 include metals and alloys of metals.

Assuming for the sake of discussion only and without making any admissions thereto, if the last dielectric layer and the outer titanium oxide layer of Finley are protective layers as alleged by the Office Action, the

protective layer would be a combination of an alloy oxide film and a metal oxide film. This combination would not meet the recitation of applicants claim 36 of "(B) at least two films selected from: metal, metal-oxy materials, ...where the oxy-materials are selected from oxides..., and where the metal of the at least two films is the same or different and selected from a transition metal of Groups 4, 5, 6 or 10 of the Periodic Table of Elements."

Based on the foregoing, applicant respectfully requests withdrawal of the rejection of claim 36 under 35 U.S.C. 102(b) as being anticipated by Finley.

Claims 37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finley in view of Arbab et al. EP 080348A2 (hereinafter also referred to as "Arbab"). Applicant respectfully traverses the rejection of claims 37 and 41 under 35 U.S.C. 103(a) as being unpatentable over Finley in view of Arbab, and requests reconsideration thereof.

Claims 37 and 41 are dependent on claim 36. Claim 36 and Finley were discussed above.

The Office Action alleges that Finley teaches the low emissivity window stack as discussed above, but does not include additional dielectric and IR reflective layers. The Office Action continues by alleging that Arbab teaches a high-transmittance, low-emissivity coated article including multiple dielectric and IR layers in the stack, referred to as double stacks; that this result in an article with an improved shelf life, and that it would have been obvious to one of ordinary skill in the art at the time of the invention to provide Finley with additional layers to provide an article with improved shelf-life.

Applicant respectfully submits that in the above discussion regarding claim 36, applicant clearly showed that Finley does not teach the protective layers recited in applicant's claim 36. Arbab does not cure this defect of Finley; therefore, Finley in view of Arbab does not render the embodiments of the invention recited in applicant's claims 37 and 41 obvious.

Applicant assumes only for the sake of discussion that an artisan would combine Finley and Arbab. Applicant respectfully submits that the combination would not render obvious the subject matter recited in applicant's claims 37 and 41. More particularly, claim 37 recites that the protective layer is an overcoat over the second dielectric layer where the protective layer includes, among other things, "(A) a heat convertible metal film wherein the metal is selected from zirconium, niobium, tantalum, chromium, nickel and alloys thereof and alloys with silicon at a thickness for the layer of 15 to 25 Å, (B) at least two films selected from: metal, metal-oxy materials, silicon and silicon oxy-materials where the oxy-materials are selected from oxides and oxynitrides, and where the metal of the at least two films is the same or different and selected from a transition metal of Groups 4, 5, 6 or 10 of the Periodic Table of Elements, or (C) a heat convertible metal film wherein the metal is selected from niobium, tantalum and alloys thereof and alloys with silicon at a thickness for the layer of 5 to 60 Å wherein the protective layer is located in the stack of layers to provide durability to the stack of layers and wherein the protective layer is not deposited on the optionally a first metal primer layer and the (A) film is deposited over the dielectric layer spaced the greatest distance from the substrate." Applicant has shown above that there is no disclosure in Finley of the protective layer recited in applicant's claim 36. The Office Action has not identified any discussion in Arbab of applicant's protective layer recited in claim 36. Therefore, the protective layer recited in applicant's claims 36 and 37 is not disclosed by the combination of Finley and Arbab.

Based on the foregoing, the combination of Finley and Arbab would not render obvious applicant's subject matter recited in claim 37.

Regarding claim 41, the Office Action alleges that with an embodiment of multiple dielectric layers and silver layers intervening, the final layers of Finley taught as Ti/ZnSnO/TiO would serve as a protective layer.

Claim 41 recites, among other things, "the protective layer has at least two films selected from the groups consisting of (A) metal and silicon and (B) metal oxy-material and silicon oxy-material and the protective layer is located over the second dielectric layer that is on the reflective layer and further comprising a third optional dielectric layer over the protective layer. The Office Action alleges that the Ti/ZnSnO/TiO layers of Finley are covered by claim 41. Applicant discussed above that ZnSnO is an oxide of an alloy and is not an oxide of a metal and therefore cannot render obvious or anticipate the claimed protective layer recited in claim 41.

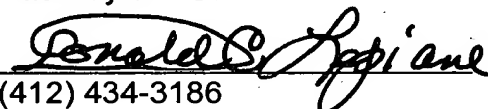
Based on the above, applicant respectfully requests withdrawal of the rejection of claims 37 and 41 under 35 U.S.C. 103(a) as being unpatentable over Finley in view of Arbab.

Based on the above, applicant requests allowance of claims 36 - 38, 40 and 41.

This amendment represents a sincere effort to place the application in condition for allowance. In the event issues remain, the Examiner is invited to call the undersigned to discuss those issues before further action is taken on the case.

Respectfully submitted,

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